

## **DETAILED ACTION**

### ***Response to Amendment***

The rejection of claims 16-20, 26-27, and 29-30 under 35 U.S.C. 103(a) as being unpatentable over Take et al., 4,645,548 in view of Chase et al., 3,948,673 is withdrawn in view of applicants' arguments.

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 16-20, 26-27, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Take et al., 4,645,548 (Take) in view of Tagge et al., 6,955,844 B2 (Tagge).

Take is as set forth in the previous Office Actions and teaches gypsum board comprising a gypsum matrix having a top and bottom, wherein the gypsum matrix is of the type contemplated by applicants in claims 18 and 19, wherein the matrix has a first facer sheet placed on the bottom and a second facer sheet placed on the top, said facer sheets being paper, per claim 17, further teaching that glass fibers can be added, but does not specifically teach that the glass fibers are a glass fiber mat coated with silane based sizing composition. See entire document, and for example, abstract, column 2, lines 13-47, column 4, lines 62-63 and column 5, lines 28-40. Tagge discloses a multifunctional surface modification composition that can be a sizing composition and applied to glass fibers mats having utility in the formation of gypsum wallboard. The sizing composition can contain silane and comprises a hydrophobic moiety and a

Art Unit: 1794

hydrophilic moiety whereby one region can interact with surface groups to anchor to the fiber while the other regions perform different functions, such as adhering to gypsum, and wherein crosslinking can result in the formation of a network. See entire document, and in particular, abstract, column 3, lines 28-30, column 5, line 45 through column 6, and line 2, column 9, lines 30-40, and column 12, lines 57-62.

Glass fiber reinforcement of gypsum is well known in the art as evidenced by the teachings of Take and Tagge. To modify the teachings of Take by using a glass fiber mat as taught by Tagge would have been an obvious variant to the skilled artisan at the time the invention was made with the reasonable expectation of obtaining enhanced adhesion of the mat to the gypsum matrix. As to claims 20, 27 and 29, Tagge is silent as to the specific silane. Nevertheless, the inclusion of organosilanes in sizing compositions is well known in the sizing composition art based upon their ability to promote adhesion and known function as coupling agents. Therefore, it is the position of the examiner that the inclusion of polymethylsiloxane in the sizing composition of the prior art, is no more than a preferential selection of one silane from among many being selected for its art recognized purpose. In the absence of factual evidence on this record of superior or unexpected properties in the resultant gypsum board that are directly related to the instant claimed polydimethylsiloxane, this limitation is not construed to be a matter of invention. Applicants are invited to provide such evidence. Regarding claim 26, it would have been obvious to the skilled artisan to incorporate into the sizing composition a plurality of silane molecules to increase the adhesion of the glass fibers to the gypsum matrix. Regarding claim 30, this claim is drawn to the

Art Unit: 1794

thickness of the size composition, which is related to the amount of add-on. It would have been obvious to one having ordinary skill in the art to adjust this amount during routine experimentation commensurate with the desired properties of the end product, such as the desired LOI, fiber breakage or pull-out. Accordingly, this requirement is not construed to be a limiting factor in the absence of factual evidence to the contrary.

Therefore, the combined teachings of Take and Tagge would have rendered obvious the invention as claimed in the present claims.

No claims are allowed.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 16-20, 26-27, and 29-30 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524.

The examiner can normally be reached on M-Th and alternate Fridays 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

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